

Team ReBoot.



iMATter User Manual

Version 1.1

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1.0 Introduction

Thank you for choosing to use iMATter! iMATter consists of two separate applications, the web application for administrative and provider use and the mobile application for assisting pregnant women in opioid recovery.

Some of the key features for the web application include:

- Ability to create and manage users
- Ability to create and manage data for mobile application users, such as learning modules, pregnancy updates, and surveys
- Manage settings for certain features of both applications, i.e. avatar photos, gift card settings, etc.
- Interact with mobile application users with the information desk forum

Some key features of the mobile application include:

- Cohort chat room for users to interact with one another
- Information desk forum to ask questions to be answered by providers
- Learning center where users can interact with learning modules, watch videos, and take educational quizzes
- Surveys for administrators to get feedback from users

This manual was created to help you install and administer the iMATter mobile application, as well as maintain and trouble-shoot both the iMATter mobile and web applications. To begin, we will talk about the installation process and the steps for updating the files for the mobile application and hosting for the web application.

2.0 Installation

The iMATter web application is currently hosted and live through Firebase. The most recent APK has been uploaded to the shared Google Drive with Dr. Eaves.

Currently, the website is being hosted at:

imatter-nau.firebaseio.com and imatter-nau.web.app

To download the .APK file from the Google Drive, open the drive folder where the .APK file is located on your Android device. Then, tap the .APK file to have a prompt pop up asking if you would like to download iMATter. Say yes, and the application should begin to download.

To download the entire iMATter project repository for either the mobile or web application onto your local computer, there are two approaches: directly downloading the .zip containing the files or using Git Bash to download the files from Github. We will first go over directly downloading the .zip file.

Approach One:

1. Navigate to iMATter's Github repository for either the web or mobile application, depending on which you intend to download. This can be found at: <https://github.com/NAU-ReBoot>
2. Make sure you're in the master branch (refer to the red box in Figure 2.0).
3. Click on the green button labeled "Clone or download", and select "Download ZIP", as shown in Figure 2.0.

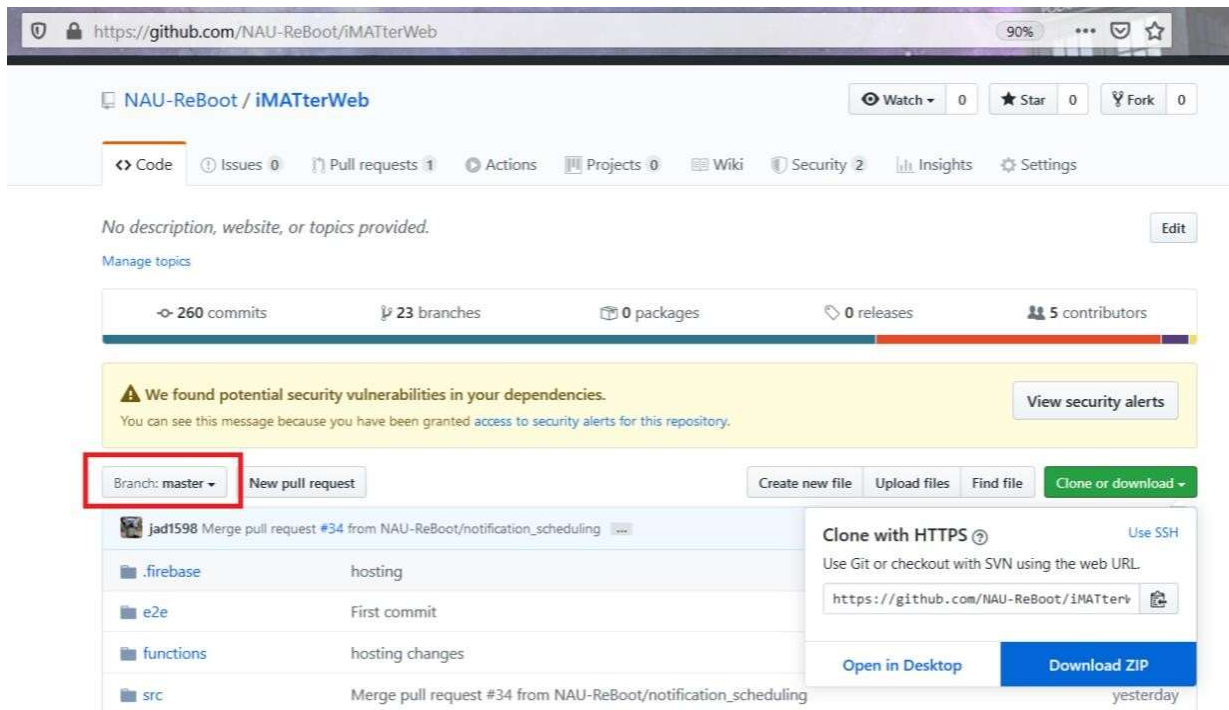


Figure 2.0 - iMATter Github Page

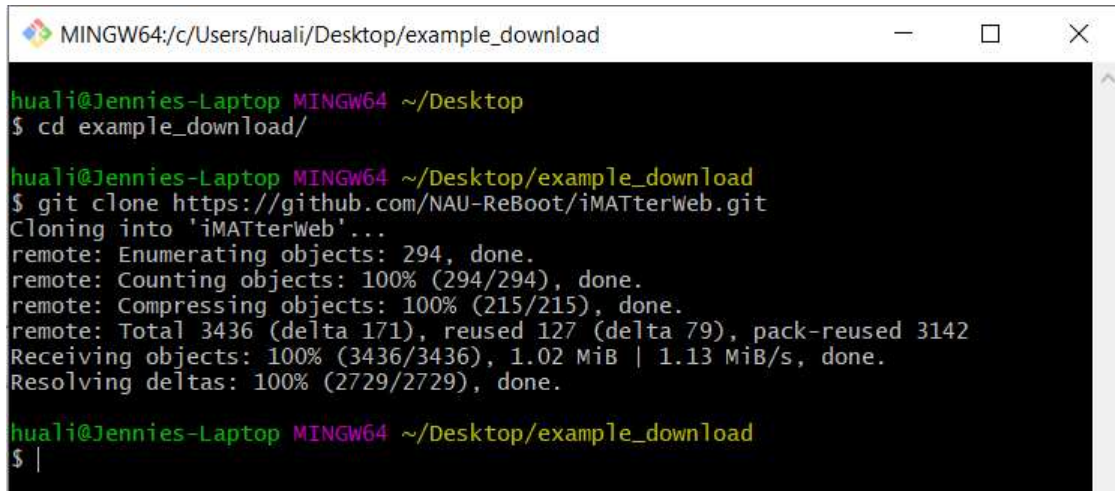
Approach Two:

Prerequisites: have Git installed on your computer, as well as the Git Bash terminal.

1. Navigate to iMATter's Github repository for either the web or mobile application, depending on which you intend to download.
2. Make sure you're in the master branch (refer to the red box in Figure 2.0)
3. Click on the green button labeled "Clone or download", and copy the URL shown.

4. Open the Git Bash terminal and cd to the directory you wish to save the iMATter application repository in.
5. Run the following command, substituting in the URL from step 3 (example shown in Figure 2.1):

```
git clone <REPOSITORY URL>
```

A screenshot of a Git Bash terminal window. The title bar shows the path "MINGW64:/c/Users/huali/Desktop/example_download". The terminal text shows the user "huali@Jennies-Laptop" in a "MINGW64" environment at the directory "~/Desktop". They run "cd example_download/" and then "git clone https://github.com/NAU-ReBoot/iMATterWeb.git". The output shows the cloning progress: "Cloning into 'iMATterWeb'...", "remote: Enumerating objects: 294, done.", "remote: Counting objects: 100% (294/294), done.", "remote: Compressing objects: 100% (215/215), done.", "remote: Total 3436 (delta 171), reused 127 (delta 79), pack-reused 3142", "Receiving objects: 100% (3436/3436), 1.02 MiB | 1.13 MiB/s, done.", and "Resolving deltas: 100% (2729/2729), done.". The prompt returns to "\$ |".

```
MINGW64:/c/Users/huali/Desktop/example_download

huali@Jennies-Laptop MINGW64 ~/Desktop
$ cd example_download/

huali@Jennies-Laptop MINGW64 ~/Desktop/example_download
$ git clone https://github.com/NAU-ReBoot/iMATterWeb.git
Cloning into 'iMATterWeb'...
remote: Enumerating objects: 294, done.
remote: Counting objects: 100% (294/294), done.
remote: Compressing objects: 100% (215/215), done.
remote: Total 3436 (delta 171), reused 127 (delta 79), pack-reused 3142
Receiving objects: 100% (3436/3436), 1.02 MiB | 1.13 MiB/s, done.
Resolving deltas: 100% (2729/2729), done.

huali@Jennies-Laptop MINGW64 ~/Desktop/example_download
$ |
```

Figure 2.1 - Git Bash Terminal

The repository should now appear in the directory you navigated to in step 4.

As stated before, the web application is currently live on Firebase. If there is a need to rehost the website, follow these steps:

1. In a terminal, cd into the directory where you have saved the application folder.
2. In the root folder, run the following command:

```
ionic build --prod --release
```

This will generate the necessary folder (www) for Firebase to host the website.
3. If you have not already installed the Firebase client tools, enter this command:

```
npm install -g firebase -tools
```
4. Now you will need to login to your firebase account

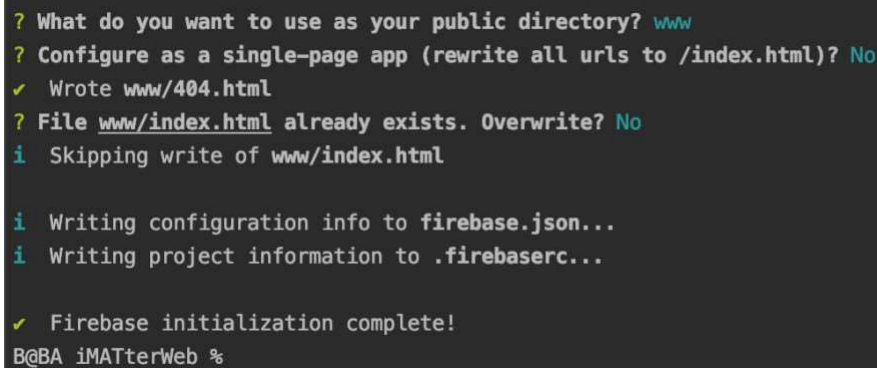
```
firebase login
```

This will prompt you to enter your credentials
5. Next you will enter the command:

```
firebase init
```
6. This will bring up a selection for you to choose from, use the keyboard arrows to go down to the 'Hosting' option, hit space to select this, then enter.

7. You will now be asked multiple questions to properly initialize the website for deployment. Below are the questions in black and inputs in blue and there is an example in Figure 2.2:

```
What do you want to use as your public directory? www
Configure as a single-page app (rewrite all urls to
                                                    /index.html)? No
File www/index.html already exists. Overwrite? No
```

A terminal window with a dark background and light-colored text. It shows the output of the 'firebase init' command. The prompts are in green, and the user's inputs are in blue. The process includes writing a 404.html file, skipping the index.html file because it already exists, writing configuration and project information to files, and finally completing the initialization.

```
? What do you want to use as your public directory? www
? Configure as a single-page app (rewrite all urls to /index.html)? No
✓ Wrote www/404.html
? File www/index.html already exists. Overwrite? No
i Skipping write of www/index.html

i Writing configuration info to firebase.json...
i Writing project information to .firebaserc...

✓ Firebase initialization complete!
B@BA iMATterWeb %
```

Figure 2.2 -Firebase questions to initialize website for Firebase

8. Last, you will enter the command:

```
firebase deploy --only hosting
```

After following these steps, the website should be deployed and ready for use!

With our final turn in, we have provided the final 'as-built' version .APK file. In the case that you need to create a new .APK file to distribute the mobile application to Android users without having to upload the application to the app store, you will have to follow a few steps. We have provided the necessary key file for signing the unsigned application (applications must be signed to allow them to download) in the root file of the Ionic application. To generate and sign an .APK for distribution:

Prerequisites: have Android SDK tools installed on your computer

1. In a terminal, cd into the directory where you have saved the application folder.
2. In the root folder, run the following command:

```
ionic cordova build --release android
```

This will generate the unsigned .APK file.

3. After the file has finished generating, run the following command:

```
jarsigner -verbose -sigalg SHA1withRSA -digestalg SHA1 -  
keystore my-release-key.keystore  
platforms/android/app/build/outputs/apk/release/app-  
release-unsigned.apk alias_name
```


When prompted to “Enter passphrase for keystore,” the passphrase is **imattermobile2020**. This will sign the .APK file.

4. For this .APK to be able to be properly downloaded, you will have to run one last command. CD into the directory that contains the Android SDK tool zipalign.exe. The path may look something like:

“C:\Users\[user]\AppData\Local\Android\Sdk\build-tools\29.0.2”

Verify that zipalign.exe is in this folder, then run the command

```
zipalign -v 4 platforms/android/app/build/outputs  
/apk/release/app-release-unsigned.apk  
iMATter_V#.#.apk
```

Where the #.# is replaced with your current version number of the application.

After following these steps, the new version will be listed in the files of the root folder (figure 2.4)

2.3) as ‘iMATter_V#.#.apk’. This is the file you will distribute, as seen in figure 2.4.

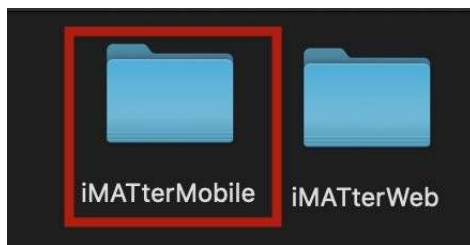


Figure 2.3 - iMATterMobile Root Folder

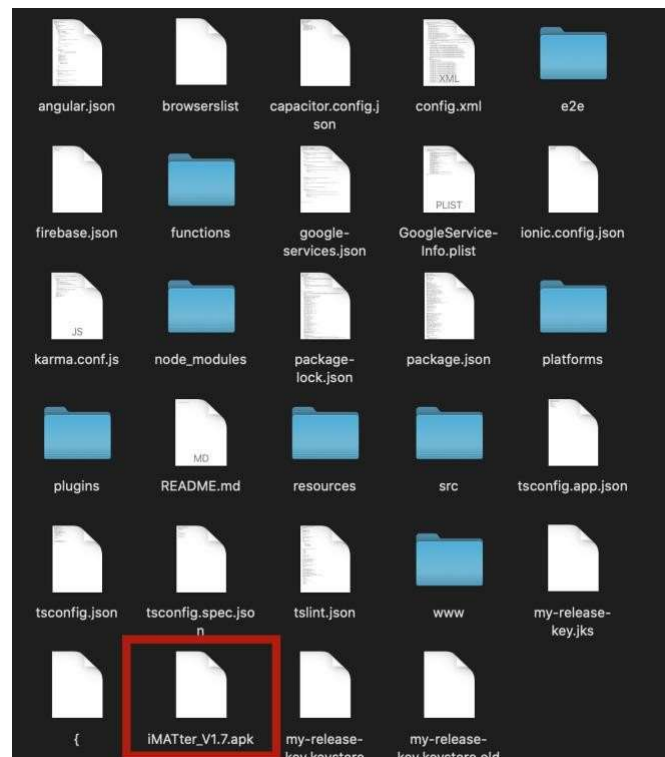


Figure 2.4 - iMATter .APK File for Distribution

In order to distribute this application where users can download, we recommend uploading the file to a Google Drive folder, as gmail will not allow you to email the .APK. With the Android device you want to install the application on, open this folder and tap the .apk file to start the installation process.

As of this point, we were unable to produce a file to distribute for iOS due to Apple restrictions. However, the product has been built, and new XCode files can be generated by running the command:

```
ionic cordova build ios
```

If you have a Mac computer and can download and use XCode, you may open the project in Xcode that is generated when the command above is run. The directory is located at `../iMATterMobile/platforms/ios/`

To build these projects for release, it is required to have an Apple's Developer account. If you have an account for this, you will be able to plug in an iPhone via cable and run the project on that phone. However, this requires an accepted phone that has been added to the developer account.

Now that you have the iMATter applications on your machine, we will go over how to use them.

3.0 Configuration and Daily Operation

The following sections details management of the web application's features and goes over how mobile application users will get started with using iMATter.

3.1 Users

Once an admin logs into their account, this is the home page they are brought to. There are three different lists, one for each type of user. Any user may be deleted, only providers and users can be updated.

Admins are able to create three different types of users:

- **Users:** These are mobile application users.
- **Providers:** These are people that have been recruited to help with answering questions on the information desk.
- **Administrators:** These are people that have been recruited to help manage users and data.

3.1.1 Creating and Updating Mobile Users

A new user is created by clicking the 'Add User' button. This will generate a random 6-character code. This is the code that needs to be given to the user for them to be able to access the sign up on iMATter. To see codes that have been created for users, but the user has not signed up, click the 'Not Signed Up Users' button. There is also one optional field:

- **Notes:** Admin notes about that user

To update a user, click the 'Update User' button. This will navigate to a new page that will show information about the user that cannot be edited at the top and the information that can be changed at the bottom. Only three fields may be updated:

- Cohort
- Point Total
- Notes

3.1.2 Creating and Updating Providers

A new user is created by clicking the 'Add Provider' button. To complete creating the provider, there are 5 fields that are required to be entered:

- **Provider Type (selection):** The type of provider they are
- **First Name:** The provider's first name
- **Last Name:** The provider's last name
- **Date of Birth:** The provider's date of birth
- **Email:** The provider's email they want to use for login

There is also one optional field:

- **Notes:** Admin notes about that user

Once entered, the submit button can be pressed, which will generate a random 6-character code. This is the code that needs to be given to the provider for them to be able to access the sign up on the iMATter website.

To update a provider, click the 'Update Provider' button. This will navigate to a new page that will show information about the user that cannot be edited at the top and the information that can be changed at the bottom. Only three fields may be updated:

- Email
- First Name
- Last Name
- Notes

3.1.2 Creating and Updating Administrators

A new user is created by clicking the 'Add Admin' button. To complete creating the provider, there is one field that is required to be entered:

- **Email:** The provider's email they want to use for login

There is also one optional field:

- **Notes:** Admin notes about that user

Once entered, the submit button can be pressed, which will generate a random 6-character code. This is the code that needs to be given to the new administrator for them to be able to

access the sign up on the iMATter website.

To update an admin, click the 'Update Admin' button. This will navigate to a new page that will show information about the user that cannot be edited at the top and the information that can be changed at the bottom. Only one field may be updated:

- Notes

If an admin would like to update their email, they may do so themselves in their profile.

3.2 Information Desk

The information desk is a shared forum between all mobile users, providers, and administrators. Here, a list of questions can be seen as well as a filter list of questions you have personally answered by clicking the 'Questions You Answered' button. Clicking on one of the posts will navigate to the question thread, where the question and replies can be seen, also with who posted them and when. To reply to a question, click the 'Reply' button and enter the reply.

As an admin, there is the option to delete specific comments or an entire question thread if needed.

3.3 Chat Log

On the chat log page is a list of all current cohorts. A cohort can be clicked on to view the chat log of that chat room. Each message can be viewed with who sent it, when it was sent, if the message is currently visible to users in the chat room, and the message itself. Messages may be searched by entering a keyword in the search bar. Messages may be deleted if needed.

For maintaining the database, there is a button on the main chat log page where the cohorts are listed, 'Delete Not Visible Chats'. Clicking this button will delete all chats in all cohorts that are not visible to anyone. This is primarily for storage maintenance.

3.4 Learning Modules

Learning modules that are set to active will appear for appropriate mobile users in the learning center portion of the application. After adding a new learning module, the new module will not appear for users until the notifications for it have been sent. Edits to an existing module will appear immediately, and deletion of a module or changing the status to inactive will instantly remove it from view of mobile users.

3.4.1 About Module

Input fields under this section of a learning module are required. Additional information about some of these fields can be found by clicking on the blue question mark next to the section title from the web application. Additional notes on these fields are as follows:

- **Days Visible Before Expiration:** this field is inclusive, meaning that if the number 3 is inputted here, the module will still be visible on day 3, but disappear on day 4.
- **Module Contents:** information inputted here will appear above the YouTube video or PowerPoint in a learning module in the mobile application. Its purpose is to provide instructions (e.g., “please watch the video and answer the following questions”), preliminary information to learning module material, or other information (e.g., “the video is two minutes long”).

3.4.2 Module Media

Learning modules can currently show two types of media: YouTube videos and Google Slides presentations.

- **Module Video ID (YouTube Video ID):** YouTube video IDs are a series of characters that are typically alphanumeric but can sometimes contain symbols which can be found at the end of every YouTube video URL. To obtain the video ID of a YouTube video you wish to be displayed in the module, locate the URL for the YouTube video. The ID will be at the end of the URL after the equals sign (refer to the red box in Figure 3.0).

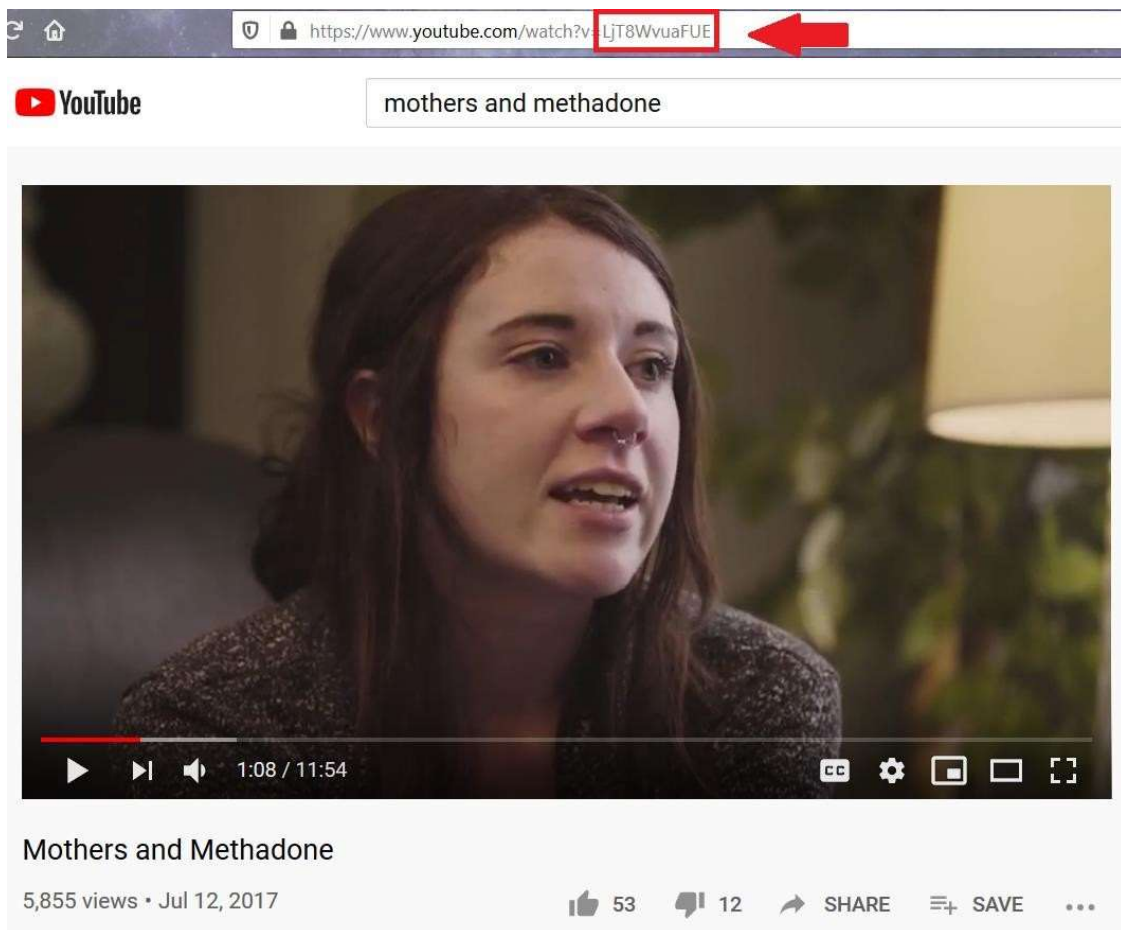


Figure 3.0 - YouTube Video ID

- **Module PowerPoint URL (src):** This URL is obtained from generating the embed code for a Google Slides presentation. The following are the steps to obtain the URL:
 - From the Google Slides website, navigate to the presentation you wish to display in a learning module.
 - Click on “File”, then select the “Publish to the web” option.
 - Select the “embed” tab and configure the settings boxed in red in Figure 3.1 as desired. Note that the slide size setting is not relevant and changing it will not affect how the slides appear in the mobile application.
 - Within the code snippet provided, copy the URL that follows “src=”, as shown highlighted in blue in Figure 3.1. Leave out the quotation marks.
 - Paste the URL into the Module PowerPoint URL field in the iMATter web application.

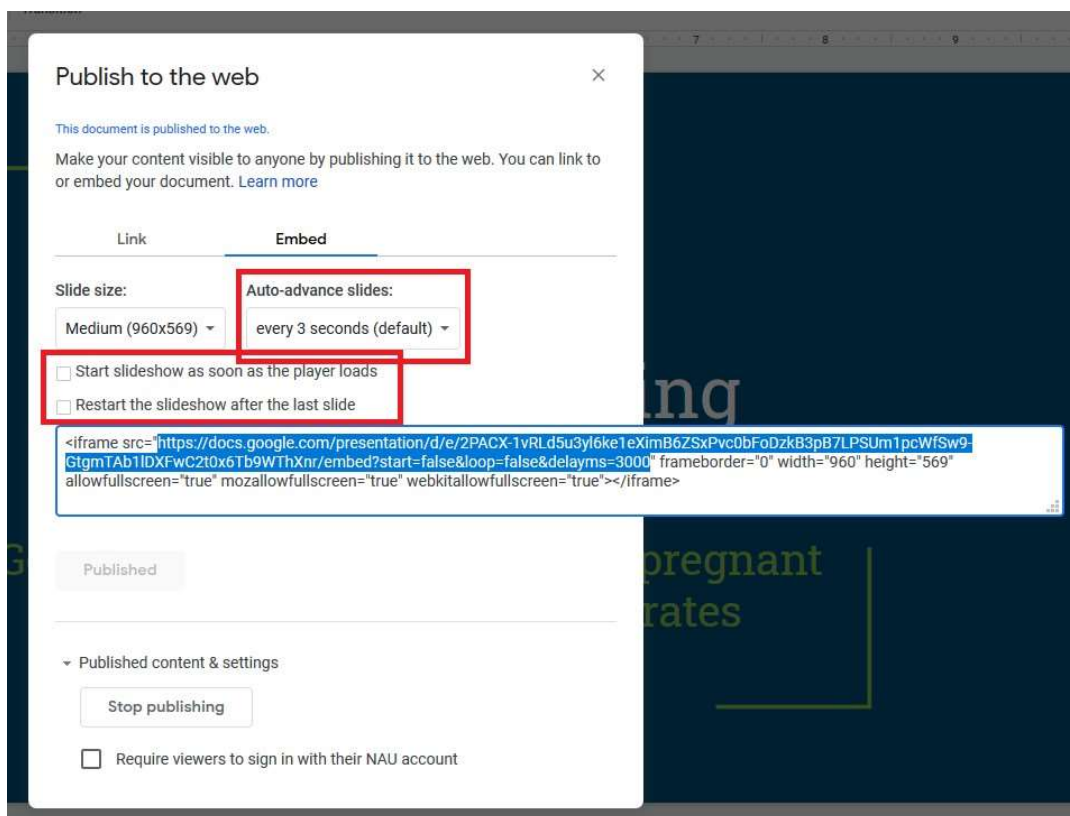


Figure 3.1 - Google Slides Embed

After saving the learning module with the YouTube Video ID or PowerPoint URL inputted, once you re-enter the module, a preview of the selected media will appear.

3.4.3 Module Quiz

Quiz questions added here will appear under the module media in the mobile application. If the learning module has a video, the questions will only appear after the video has been watched to the very end once. After this, the questions will always appear. The point value assigned to each quiz question is the number of reward points added to the user's account if they get the question right. Mobile application users will have three quiz attempts, and points earned are taken from the most recent quiz attempt as opposed to the highest attempted score.

3.4.4 Next Module

The learning module linked here will be suggested to users after they've taken the quiz once. Only active learning modules are listed here, and it does not take into consideration whether a linked module's weeks of display match a given user. For example, Module A's week of visibility is 29 and Module B's is week 36. In Module A's settings, you designate Module B as the next module. A user in week 29 taking Module A will be able to navigate to Module B since it's linked, even though the user is not in week 36 yet.

3.4.5 Send Notifications Now

As previously mentioned, new learning modules will not show up for mobile users until notifications are sent. The times these notifications are sent can be configured in the settings (see section 3.10.4). However, the "Send Notifications Now" button can be used to immediately send notifications to users for learning modules. Once this button is pressed, a window will popup asking you to sign into an account, as shown in Figure 3.2. Please sign in using the account associated with the iMATter Firebase account. This is required in order to successfully send the notifications.

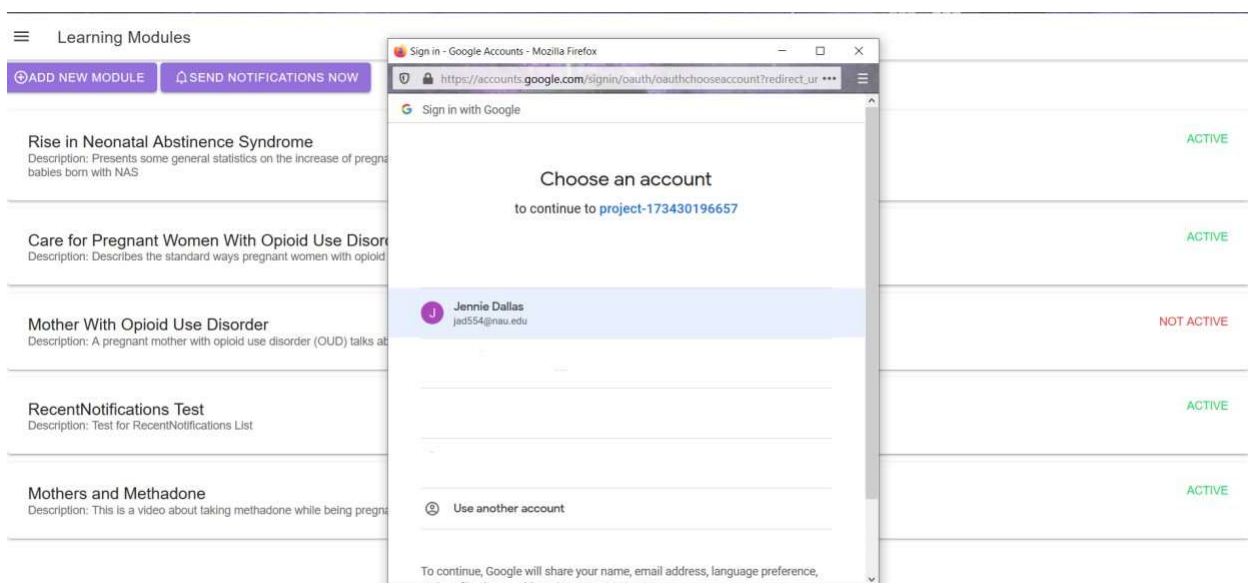


Figure 3.2 - iMATter Send Notifications Immediately for Learning Modules

3.5 Surveys

Surveys will appear for appropriate mobile users in the Surveys portion of the application. After adding a new Survey, it will not appear for the users until a notification for it has been sent. Edits to an existing Survey will appear immediately, and deletion of a survey will instantly remove it from view of mobile users.

3.5.1 About Survey

Input fields under this section of a survey are required. Additional information about some of these fields can be found by clicking on the blue question mark next to the section title from the web application. Additional notes on these fields are as follows:

- **Survey Type:** There are 4 different types of surveys:
 - After User Joining: This survey will appear to users who have joined the app after a certain number of days specified by the administrator.
 - Before Due Date: This survey will appear to users whose due date falls between certain days specified by the administrator.
 - Inactive User: This survey will appear to users who have not logged into the application for a certain number of days specified by the administrator.
 - Particular Mood: This survey will appear to users who input a particular mood that matches with the mood specified by the administrator.
- **Days Visible Before Expiration:** This field is inclusive, meaning that if the number 3 is inputted here, the survey will still be visible on day 3, but disappear on day 4.
- **Survey URL:** This is the URL that will link the user to the Qualtrics survey.

3.5.2 Survey Type Fields

As there are four different types of surveys, depending on which type is selected, the available input fields will change. The following are the possible different fields that will appear, along with the surveys that they are associated with:

- **Display Survey During Days After Joining:** If the survey type is “After User Joining” this field will be available. The input for this field should be a comma separated list of days since joining the app. For example, if the input for this field is 5, 10, 15; a user has been a user for 5 days, and the expiration day has not been surpassed then the survey should show up for the user.
- **Display Survey During Days Before Due Date:** If the survey type is “Before Due Date” this field will be available. The input for this field should be a comma separated list of days before the user’s due date. For example, if the input for this field is 5, 10, 15 and

the expiration day is 3, the user's due date is set for 1/31/21; the survey should appear for the dates: 1/16/21 - 1/19/21, 1/21/21 - 1/24/21, and 1/26/21 - 1/29/21.

- **Display Survey After Days of Inactivity:** If the survey type is "Inactive User" this field will be available. The input for this field should be a single integer representing how many days inactive a user should be before they see the survey. For example if the input for this field is 5 days and the user has not logged in for 5 days or more, then this survey should appear to the user.
- **Emotion Chosen:** If the survey type is "Particular Mood" this field will be available. The input for this field should be a selection from the available moods. For example if the mood "sad" is chosen, and if on any day the user indicates that they are "sad" on the mobile application then the survey should appear for them.

3.5.3 Survey URL

This will be the URL that will link from our app to the Qualtrics survey desired. The following are the steps to obtain the URL:

- Go to the Qualtrics survey created
- Copy the URL in the address bar, as shown in Figure 3.3.
- Paste the URL into the Survey URL field in the iMATter web application.

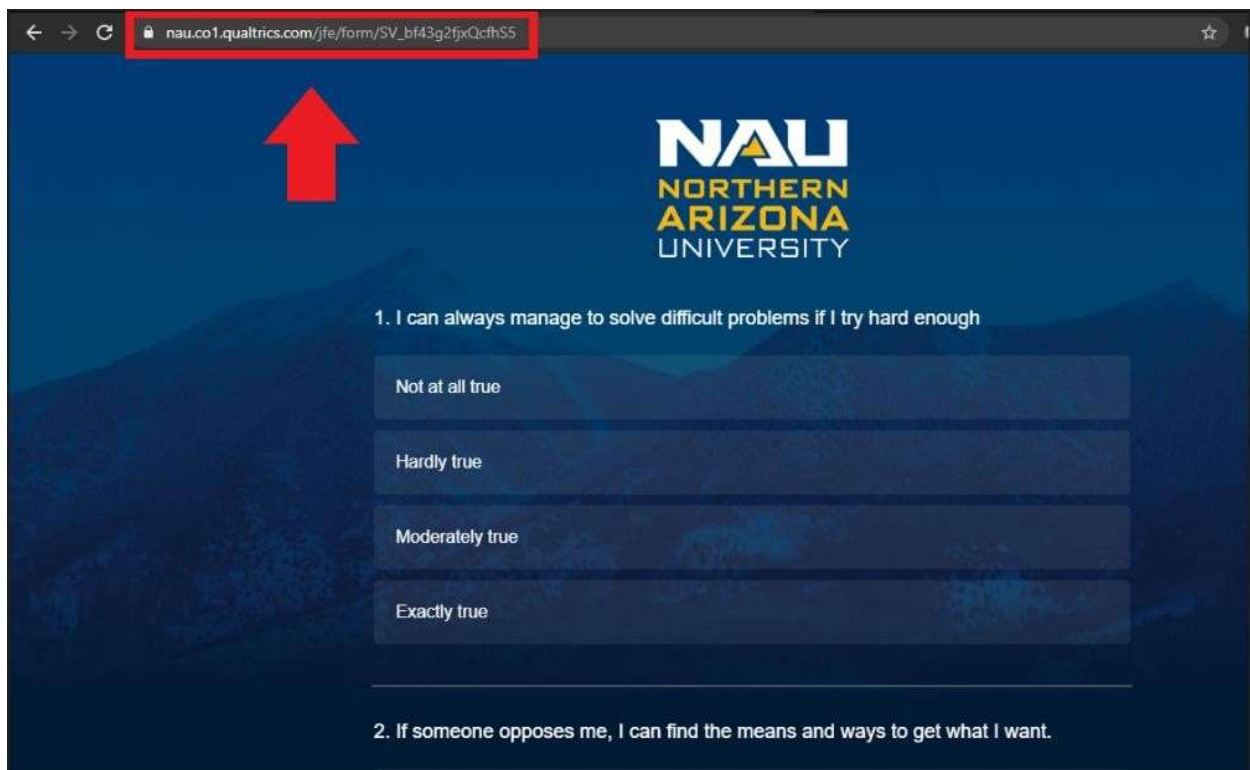


Figure 3.3 - Example of Qualtrics link

3.5.4 Send Notifications Now

As previously mentioned, new surveys will not show up for mobile users until notifications are sent. The times these notifications are sent can be configured in the settings (see section 3.10.4). However, the “Send Notifications Now” button can be used to immediately send notifications to users for surveys. Once this button is pressed, a window will popup asking you to sign into an account, as shown in Figure 3.4. Please sign in using the account associated with the iMATter Firebase account. This is required in order to successfully send the notifications.

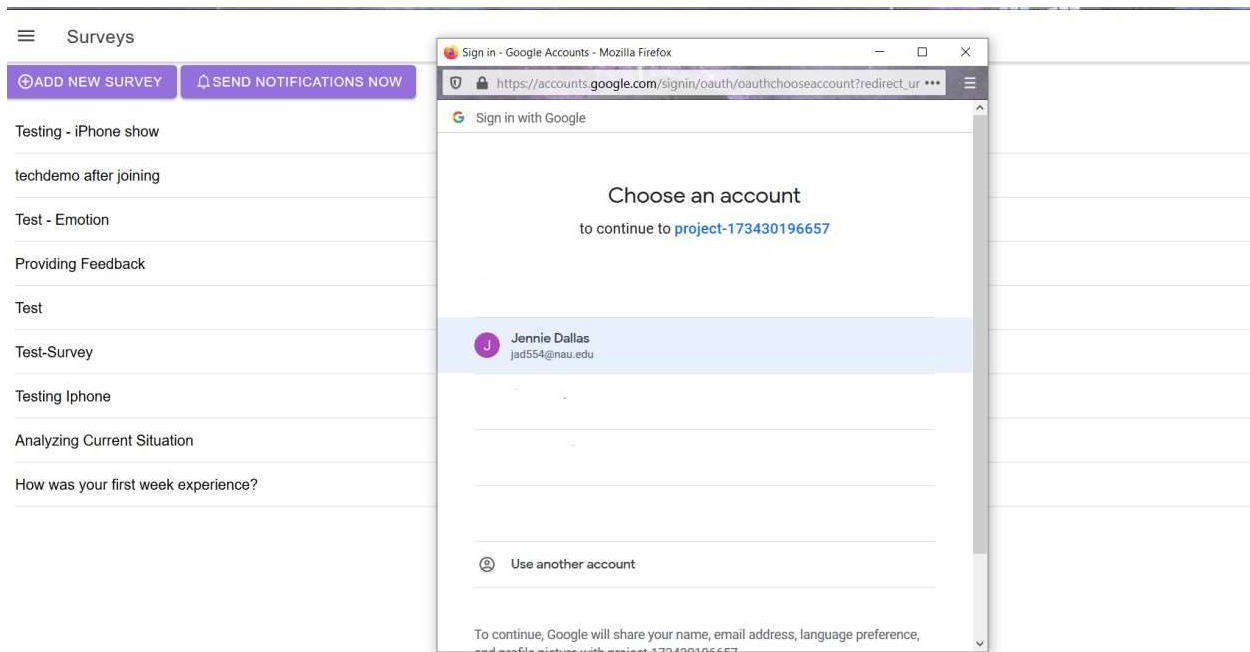


Figure 3.4 - iMATter Send Notifications Now for Surveys

3.6 Pregnancy Updates

Pregnancy updates are based on the specific day of pregnancy that a user is in. On the main page for pregnancy updates, each already created update is listed by day. Pregnancy updates may be updated or deleted after creating them.

3.6.1 Creating Pregnancy Updates

Pregnancy updates require three fields to create:

- **Pregnancy Update Day:** This is the specific day the update should appear for users in their pregnancy. Day entered must be a number 0 to 280.
- **Pregnancy Update Information/Description:** This is the information that will be attached to the pregnancy update. It is required to enter a description.

- **Image to be Displayed with Information:** This is the image that will be shown above the description on the home page of the mobile app. This must be a file in an image format, i.e. JPG, PNG

If these fields are input incorrectly or left empty, the pregnancy update cannot be created.

Figure 3.5 shows an example of how a pregnancy update will appear on the mobile app:

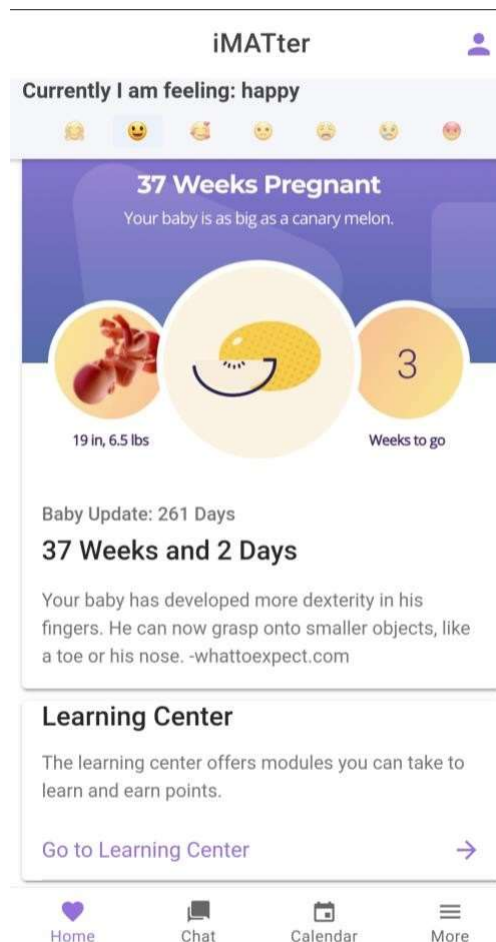


Figure 3.5 - iMATter Mobile Pregnancy Update

3.7 Analytics

Analytics has two different graph views that are generated based on the mobile user's actions. These graphs are only viewable to administrators and can individually be customized by dates.

3.7.1 Page Statistics Tab

This graph is a view of how many users are using a certain page throughout the date range selected. There are statistics on the page such as the time spent on the page and the average

times visited in a login (also referred as a session) from the user. This graph has three fields to customize:

- **Page:** This is the specific to which page the graph will be centered around.
- **From Date:** A date is entered here using the calendar. This field can also be referred to as the start date of the graph.
- **To Date:** A date is entered here using the calendar. This field can also be referred to as the end date of the graph.

3.7.2 Duration Statistics Tab

This graph is a view of the time spent on each page during the time range selected. This graph has three fields to customize:

- **From Date:** A date is entered here using the calendar. This field can also be referred to as the start date of the graph.
- **To Date:** A date is entered here using the calendar. This field can also be referred to as the end date of the graph.

3.8 Inbox

The inbox receives three different types of messages which are user reported problems, provider reported questions and comments, and user suggested locations. All admins can see these messages and have the ability to delete them as well. When viewing the provider reported question or comment message, there is a button that will navigate to the question that has been reported when clicked.

3.9 Resource Locations

Locations are resources visible on Google Maps in the mobile application. All admins can see the locations this includes being able to add, edit and delete locations. All information entered except for longitude and latitude will be displayed to the user as entered. While some input fields are self-explanatory, the following clarifies some ambiguities in others:

- **Phone Number:** The ten-digit phone number that can be used to contact this location, with the format (111)123-456.
- **Latitude:** The latitude portion of the coordinates for the inputted location. For example, 33.5526464.
- **Longitude:** The longitude portion of the coordinates for the inputted location. For example, -112.1085901.
- **Special Note:** Any extra information you wish to provide to users about the inputted location.
- **Type of Location:** The three current options here are Clinic, Hospital, and Therapy. Depending on which is selected, the color and icon of the pins that show up in Google Maps for the user will be different.

3.10 Settings

In the settings page there are different presets that administrators may change. This includes certain mobile user sign up settings, chat room settings, gift card redemption, settings, and more. The following sections will go over what can be updated and what updating those items will do.

3.10.1 Mobile User Sign Up Settings

These settings allow admins to change a few of these options users have when signing up. When a user signs up there is an automatically chosen profile picture and a list of other pictures the user may choose from. Here, admins can upload new profile pictures for users to be able to choose from or delete pictures. The auto picture can be selected from the list of already uploaded picture choices. Only images may be uploaded (i.e. PNG, JPG). Security questions for users to select from can also be added and deleted here. Adding new ones or deleting other ones will change the selection users have for security questions. Adding or deleting security questions will not change the security questions for users that have already selected theirs.

3.10.2 Cohort Chat Room Settings

In the cohort chat room settings section of this page, admins can choose how they want chats to be visible. If 'Hours' is selected, chats will no longer be visible based on the hours entered. If 'Number' is selected, only a specific number of chats that is set will be visible.

3.10.3 Gift Card Redemption Settings

In the iMATter mobile app, users may earn points for completing learning modules and surveys. In this section of the page, the number of points a user needs to be able to receive one \$5 gift card can be set. As well, the types of gift cards users can select from may be added or deleted here. When a user redeems their points, it will send an email containing that user's email and what type of gift card they have requested. The email will be sent to the entered email that is entered here.

3.10.4 Mobile Notification Settings

New learning modules and surveys will not show up for mobile application users until push notifications for that learning module or survey has been sent. Therefore, this setting configures up to two times a day that notifications can be sent for learning modules and surveys. The second time is optional and can be turned on and off using the toggle switch. Upon clicking "save", a window will popup asking you to sign into an account, as shown in Figure 3.6. Please sign in using the account associated with the iMATter Firebase account. This is required in order to successfully save the notification time settings.

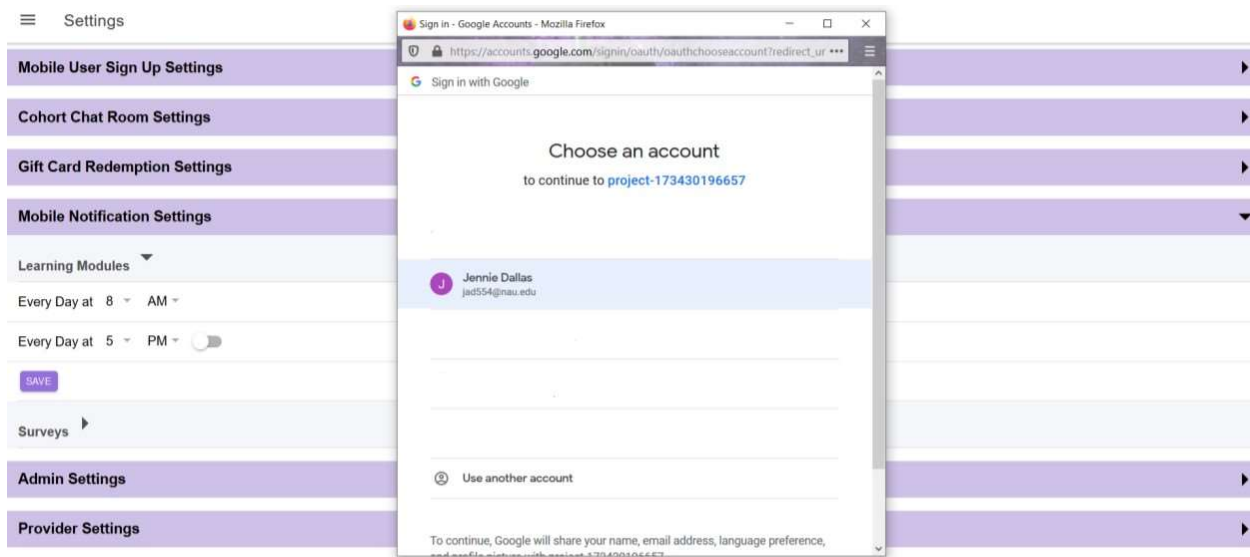


Figure 3.6 - iMATter Mobile Notification Settings

3.10.5 Admin Settings

With the current version of iMATter, there is only one setting that can be changed for admins. As admins can reply to questions in the information desk, the admin identifying profile picture can be set in this page. The profile picture will be the same for all admins. Only images may be uploaded (i.e. PNG, JPG), no other files.

3.10.6 Provider Settings

As there are different types of providers, new types may be added here. Old ones may also be deleted. To create a new type of provider, enter the name of the provider type and add their identifying profile picture. Only images may be uploaded (i.e. PNG, JPG), no other files.

Now that we have gone over how to configure and use the iMATter product, we will go over how to maintain these applications.

3.11 Mobile Application

To help mobile application users get started, you will first need to create a new user in the web application (refer to sections 3.1 and 3.1.1). After creating this user, you will provide the new user with the 6-character code. It is important that the code is entered exactly as provided, as it is case sensitive. When the user goes to create an account, they will need to enter this code so they may sign up.

As an administrator, you are able to view the security question a user has chosen and their provided answer. The idea behind the security question is in the case that a user forgets the email they used and their password, so they may be able to reset their password they can

contact the number that they got their code from. If this happens, you may ask them the security question and if they answer it correctly, you may provide them with their email.

4.0 Maintenance

We recommend deleting old data that is not being used through the web app, such as old accounts, learning modules, chats, etc. However, there is some data (i.e. data saved for sending gift card redeeming emails, password reset emails) that cannot be accessed through the web app, so we recommend visiting the Firebase console at:

<https://console.firebase.google.com/u/1/project/techdemofirebase/overview>

Here, there is the ability to delete old documents that are no longer needed, for example:

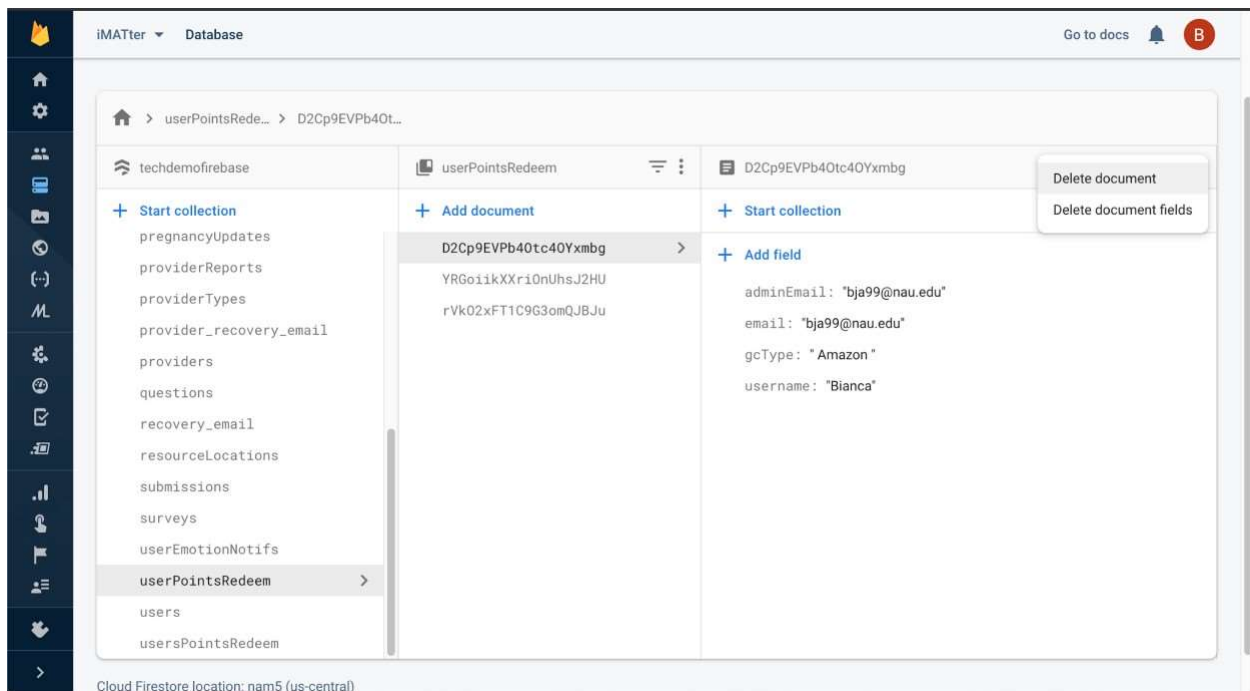


Figure 4.0 - Delete Document in Database

The Firebase connected to this application is on a pay-as-you-go plan. The card connected will only be charged if limits of reads, writes, updates, and deletions in the database has been reached. Because of this, we highly recommend monitoring the usage and billing section of the Firebase console, found here:

<https://console.firebase.google.com/u/1/project/techdemofirebase/usage>

Other than maintaining the data and watching database usage rates, there is not a high amount of maintenance required for these applications.

Next, we will discuss some common issues that may occur while using the applications and possible solutions for these issues.

5.0 Troubleshooting

In this section, Team ReBoot. has created a list of common errors we faced during the development of iMATter and how we found what the issue was.

Multiple different objects are not appearing (i.e. list of users, chats, learning modules, etc.):

A reason data could not appear when accessing the applications is:

- *No internet connection*: While this is a serverless application, Firebase requires an internet connection to be able to access the data from the database and connect it back to the application.

Learning modules or surveys are not appearing on the mobile application:

Learning modules have an 'active' option for the purpose of updating the module and not wanting it visible to users. If this module is one that should be appearing, check if the module is active. If it is, check the criteria that is set for the module to be seen, as modules will only show for users that fit the criteria. Similarly, surveys will only show if the user has fit the criteria set for the survey to show.

Another reason a learning module or survey may not show up is that new modules and surveys (except emotion update triggered surveys) are added to mobile users' applications after an admin set time (refer to section 3.10.4). If the time has not been reached since the module was added, the module will not be viewable until after.

Email was not received for resetting password:

Check the spam folder, sometimes it is sent to spam instead of the main inbox.

Navigation bar on mobile app disappeared:

This was an issue we faced a few times while testing the application. We are fairly certain we have fixed this bug, but in the chance it does occur, the application has the functionality to swipe back to the previous page (drag finger from all the way left of the screen to the right). Do this action until the navigation bar appears again. Any data that was submitted before the bar disappeared is still saved.

Cannot submit a form (i.e. new learning module, new survey, new pregnancy update, new user) / cannot sign up:

As a team we tried to ensure that everyone implemented in their modules messages that would show when required information was not entered or wrong information was entered. If you find that you cannot submit a form, check to see if what you have input fits the requirements listed.

Google Maps is not appearing:

This was an issue we faced a few times when it came to implementing a new version of our application. This is due to the google API key being set to a private key.

Under credentials in the Google API dashboard, select the API Key being used.

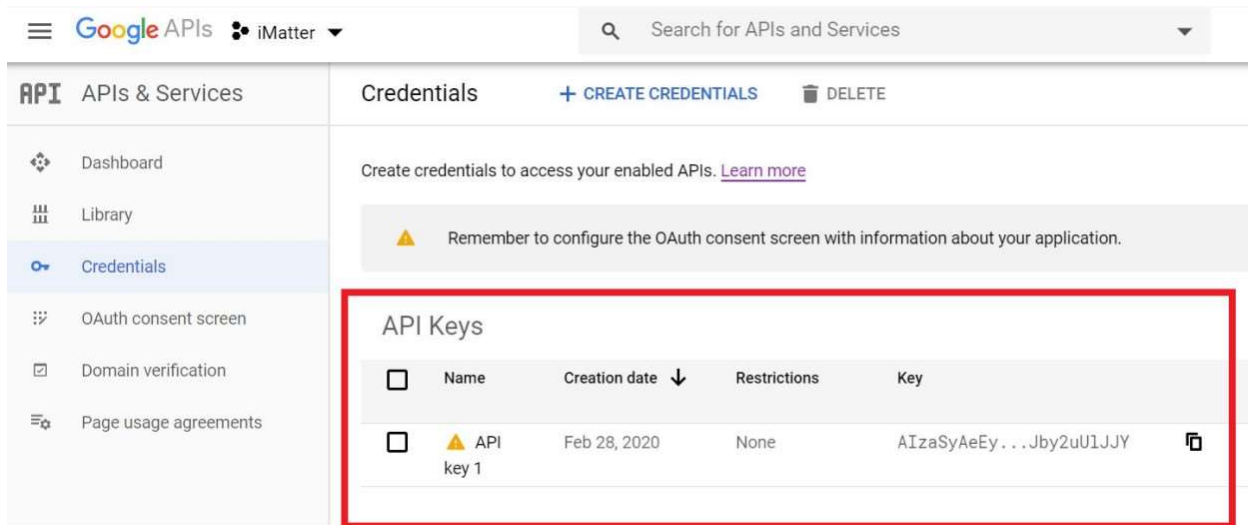


Figure 5.0 - Google API Keys

The API key application restrictions should be set to None

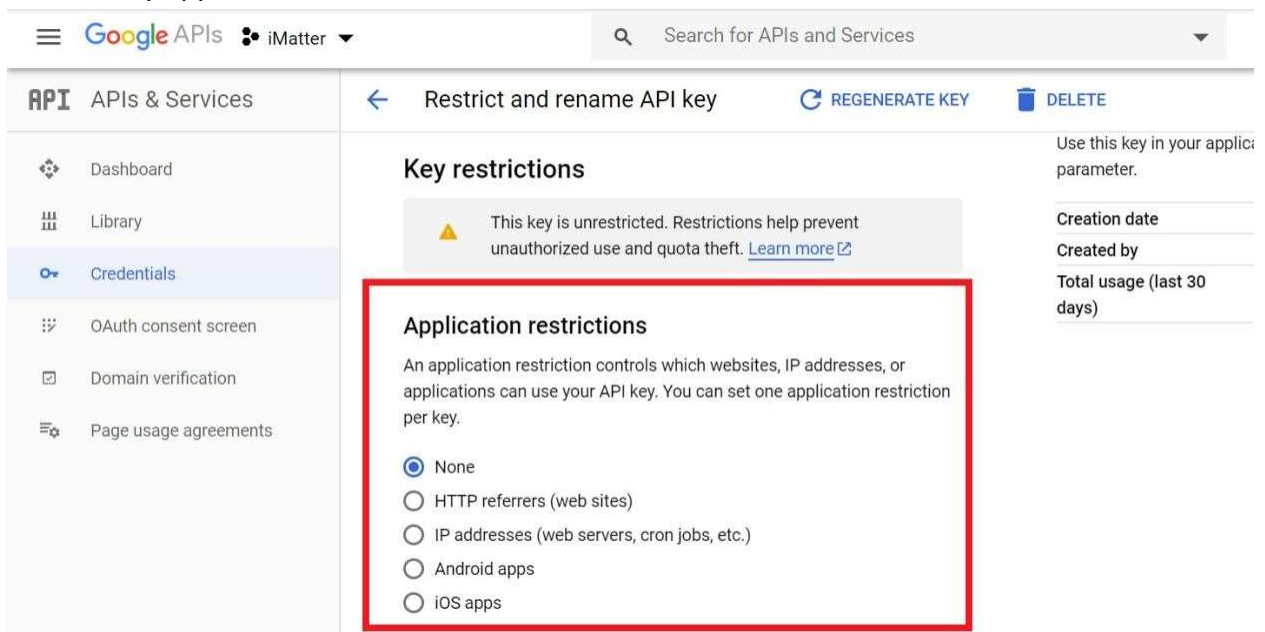


Figure 5.1 - Google API Application Restriction

Once completed it should take about 15-30 minutes for the update to take effect on the mobile application.

Firestore Client Access to the Cloud Firestore Database is Expiring

The Cloud Firestore Database uses Cloud Firestore Security Rules to control access and validate data. Every database request from a Cloud Firestore application is evaluated against the rules before reading or writing any data. To view the current rules, navigate to the Firestore tab in the Firebase console using the left hand menu. Use the upper menu of the Cloud Firestore page to go to Rules.

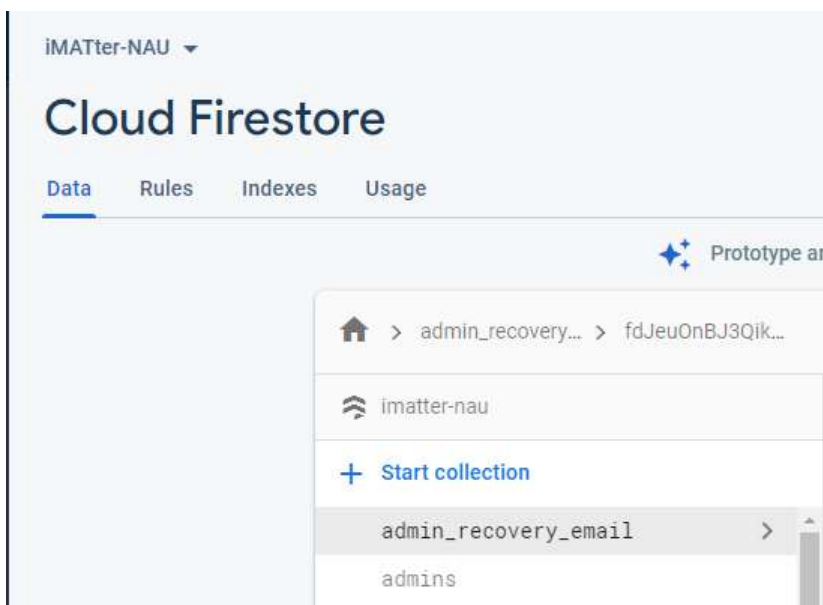
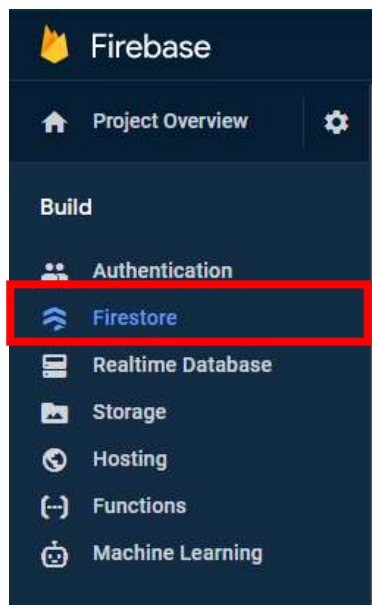


Figure 6.0 – Firestore Console

Figure 6.1 – Cloud Firestore Rules

From this screen, you will see the console for editing rules.

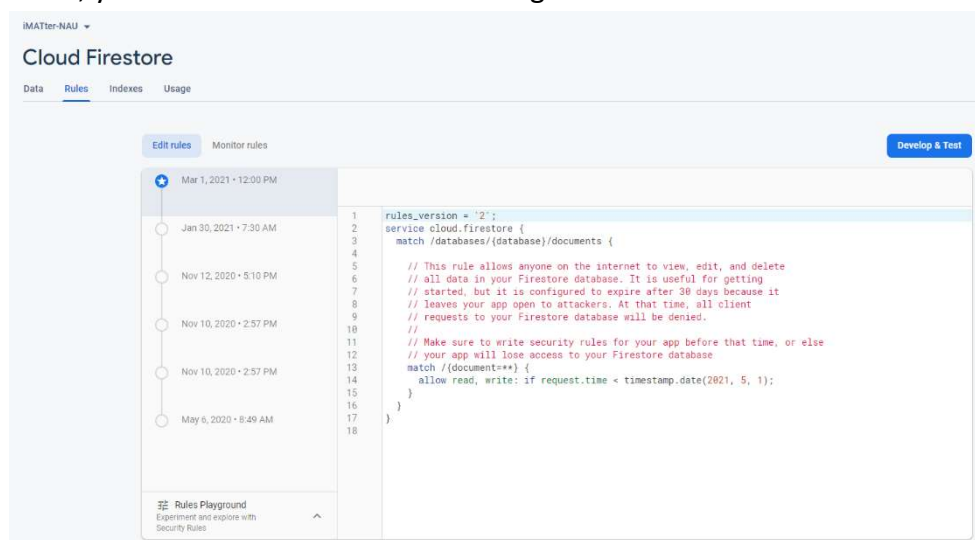


Figure 6.2 – Viewing/Editing Cloud Firestore Rules

Currently, iMATter is still using the default rule for development that allows anyone user to view, edit and delete data from the Firestore database. This rule can only be set until a certain date, at which point the rule “expires” and will prohibit any reading, writing or deletion from the database. If this occurs, no users will be able to log into their accounts on either the mobile app or the web app. You can extend this rule by extending the date:

```
rules_version = '2';
service cloud.firestore {
  match /databases/{database}/documents {

    // This rule allows anyone on the internet to view, edit, and delete
    // all data in your Firestore database. It is useful for getting
    // started, but it is configured to expire after 30 days because it
    // leaves your app open to attackers. At that time, all client
    // requests to your Firestore database will be denied.
    //
    // Make sure to write security rules for your app before that time, or else
    // your app will lose access to your Firestore database
    match /{document=**} {
      allow read, write: if request.time < timestamp.date(2021, 5, 1);
    }
  }
}
```

Figure 6.3 – Extend Cloud Firestore Development Rule

This rule will expire on May 1st, 2021. To extend it through the summer months, change this date to 2021, 8, 1 (September 1st, 2021). This is just an example.

Eventually, more secure Firebase rules will need to be written. For direction on getting started with Cloud Firestore Security Rules, refer to the documentation here:

<https://firebase.google.com/docs/firestore/security/get-started>.

6.0 Conclusion

We thank you for allowing us to help the iMATter vision come to life. We hope these applications will be able to help many women with their recovery have an easier time with more support, and that these applications can be expanded in the future to further their reach and abilities. It has been a great experience for us to develop these applications and work with you. We hope the best for you, iMATter, and all the women that can benefit from iMATter. With best wishes from your developers: Bianca Altman, Jennie Dallas, Victoria Leafgren, Isai Martinez, and Cindy Valentin. While we are all moving on to professional careers, we would be happy to answer short questions in the coming months to help you get the product deployed

and operating optimally in your organization.

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